

July 30, 1999

Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
445 12th Street, S. W.
Washington, DC 20554

Re: Numbering Resource Optimization
 CC Docket No. 99-200

Connecticut Department of Public Utility Control
Petition for Rulemaking to Amend the
Commission's Rule Prohibiting Technology-
Specific or Service-Specific Area Code Overlays
RM No. 9258

Massachusetts Department of Telecommunications
and Energy Petition for Waiver to Implement a
Technology-Specific Overlay in the 508, 617, 781
and 978 Area Codes
NSD File No. L-99-17

California Public Utilities Commission and the
People of the State of California Petition for Waiver
to Implement a Technology-Specific or Service-
Specific Area Code
NSD File No. L-99-36

Dear Ms. Salas:

Enclosed please find an original and five copies of the Joint Comments of the Texas Office of Public Utility Counsel and the National Association of State Utility Consumer Advocates for filing with the Commission in the above-referenced matters. Please also note that these Comments have been filed with the Commission electronically. Also enclosed is a diskette containing these Comments.

Please indicate your receipt of this filing on two of the additional copies provided and return them to the undersigned in the enclosed self-addressed, postage prepaid, envelope. Thank you.

Sincerely yours,

Joel H. Cheskis
Assistant Consumer Advocate

Enclosure

cc: Al McCloud, Network Services Division (2 copies)
International Transcription Services, Inc. (1 copy)

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION

In the Matter of	:	
	:	
Numbering Resource Optimization	:	CC Docket No. 99-200
	:	
Connecticut Department of Public Utility Control	:	
Petition for Rulemaking to Amend the Commission's	:	
Rule Prohibiting Technology-Specific or	:	RM No. 9258
Service-Specific Area Code Overlays	:	
	:	
Massachusetts Department of Telecommunications	:	NSD File No. L-99-17
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Technology-Specific Overlay in the	:	
508, 617, 781, and 978 Area Codes	:	
	:	
California Public Utilities Commission and the	:	
People of the State of California Petition for	:	NSD File No. L-99-36
Waiver to Implement a Technology-Specific or	:	
Service-Specific Area Code	:	

I hereby certify that I have this day served a true copy of the foregoing document,
Comments, upon parties of record in this proceeding.

Dated this 30th day of July, 1999.

Respectfully submitted,

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State of California Petition for Waiver to Implement a)
Technology-Specific or Service-Specific Area Code)

JOINT COMMENTS OF

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INTRODUCTION AND SUMMARY

The Texas Office of Public Utility Counsel (Texas OPC) represents residential and small business consumers of Texas in telephone proceedings before the Texas Public Utility commission, the Federal Communications Commission and in various state and federal courts.

The National Association of State Utility Consumer Advocates (NASUCA) is an association of 42 consumer advocate offices in 39 states and the District of Columbia. Our members are designated by laws of their respective states to represent the interests of utility consumers before state and federal regulators and in the courts.

The Texas OPC and NASUCA, hereinafter referred to as Joint Commenters, commend the FCC for its comprehensive assessment of the many ways that industry, consumer groups, state regulators, and federal regulators can work together to optimize the utilization of numbering resources. Numbering issues are complex and contentious, and the societal costs associated with inaction are enormous. Earlier this year, a report issued by Lockheed Martin in its capacity as the North American Numbering Plan Administrator (NANPA) acknowledged that although the time frame for NANP exhaust cannot be determined with precision, the NANPA developed two models that predict that the NANP will be exhausted in the 2006 to 2012 time frame. This exhaust is occurring in spite of the rapid implementation of new NPAs. In fact, since the beginning of 1995, when the Ainterchangeable NXX area code format became available, more than 77 new area codes have been or are currently in the process of being established in 32 states nationwide. In all, over 75-million, or 70% of all US telephone subscribers have been forced to accept phone number or dialing protocol changes, or both.

Deliberate and unambiguous regulatory intervention by state public utility commissions and by the FCC is essential so that we can avoid the exhaust of the North American Numbering Plan and so that we can cease the further squandering of numbering resources. Joint Commenters believe that it is unlikely that any meaningful and effective consensus will emerge in a timely manner. State PUCs and the FCC should lead the efforts, seeking industry input but being willing to make difficult choices in order to reap the benefits of number optimization before it is too late for these measures to make a difference. Based on our participation in the Numbering Resources Optimization Working Group, and our extensive experience in state proceedings on area code relief and numbering issues, Joint Commenters submit these comments. Among our recommendations are the following:

- ! The numbering debate must be viewed within the overall context of a serious societal crisis. As the FCC recognizes in its NPRM, the societal costs of area code relief, and NANP exhaust are enormous. These costs greatly overshadow any burdens imposed on the industry by or resulting from the timely implementation of effective number optimization measures.

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- ! The Joint Commenters believe that the exhaust of the present 10-digit NANP is entirely avoidable through the implementation of effective number resource optimization measures. Furthermore, the Joint Commenters believe that the FCC should not consider the expansion of the 10-digit NANP as a valid policy option. The expansion of the 10-digit NANP would engender social and economic disruptions and costs on a scale that rivals, and may even exceed, those being attributed to the AY2K computer bug. The Commission should view the prospect of NANP exhaust and expansion as a wake-up call for immediate, decisive action.
- ! The FCC should avoid analysis paralysis. First, the FCC should immediately authorize states to examine and to implement a full spectrum of number optimization measures. The resolution of the numbering crisis entails a careful consideration of consumers' interests (e.g., the costs of new area codes) and competitors' interests (e.g., the relative impact of the contamination level for pooling on incumbent and new carriers). State public utility commissions and state consumer advocates are well-positioned to tailor numbering optimization measures to reflect consumer interests, and within that effort, to address the impact of particular numbering optimization measures on the development of competition.
- ! The FCC's present policy inappropriately curtails state involvement, and unnecessarily frustrates states in their efforts to address the numbering crisis in a timely manner. Although Joint Commenters welcome industry expertise in the design and implementation of numbering optimization measures, Joint Commenters urge the FCC to affirmatively shift the debate from industry-dominated fora (which, bound by the consensus approach necessarily move slowly in this urgent and contentious area) to state and federal regulatory proceedings where timely decisions can be made and informed by but not held hostage to industry debate.
- ! Regardless of whether states consolidate rate centers, the FCC should authorize states to adopt critical measures such as the reclamation of unused codes. Also, Joint Commenters recognize that some parties seek uniformity in numbering guidelines. In this area, as in many others, Joint Commenters believe that the pressing need for states to have the ability to address the numbering crisis greatly outweigh any perceived need for uniformity.
- ! Under the present NANP structure, nearly 6-billion telephone numbers, or 95% of the theoretical capacity of the NANP, are still available for assignment. With better resource allocation, this reserve of unassigned numbers would alleviate the need for ten digit dialing. Ten digit dialing on calls within the same area code is inconvenient, confusing, a source of additional dialing errors and unwanted long distance charges. Ten digit dialing also creates potential public safety concerns, because young children and the elderly may have difficulty remembering the longer phone numbers and elevator rescue phones, some alarm dialing systems, and some multiple-unit dwelling intercom entrance systems are based on seven digit dialing and may require significant and costly upgrades to migrate to a mandatory ten

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digit dialing plan. Therefore, when weighed against its cost, the benefits of nationwide 10-digit dialing as a number resource optimization measure are minimal at best and therefore Joint Commenters strongly oppose this measure.

- ! The FCC should immediately authorize states to implement pooling options and to implement sequential number assignment (so that when pooling occurs, there are blocks of numbers left to pool). The FCC should also immediately lift its prohibition on service- and technology-specific overlays.
- ! The FCC should authorize states to implement and to enforce modifications to the Central Office Code Assignment Guidelines.
- ! The FCC should not allow carriers to recover pooling costs as exogenous costs or through rate of return systems. Also, the FCC should defer further consideration of pricing options for numbering resources until such time as other critical numbering optimization measures have been implemented.

The Commission's NPRM appropriately reflects the complexity of the numbering resource issues but fails to reflect the urgency of the situation. The current crisis has escalated to a point where the Commission must take immediate and decisive action. Delay diminishes both the availability of options and the potential effectiveness of any solutions that may ultimately be adopted. The Commission should commit immediately to expeditious, decisive, and *final* resolution of numbering matters.

State regulators and state consumer advocates are ready, willing and able to pursue and implement number optimization measures, and, although hamstrung in their efforts, have been investigating these issues for quite some time. The FCC should immediately issue an interim decision that allows states to pursue measures, such as number pooling, service- and technology-specific overlays, and improved number assignment and allocation procedures, pending the outcome of this FCC proceeding.

I. THE CURRENT NUMBERING CRISIS

- A. The current numbering crisis has escalated to a point where the Commission must now consider numbering to be an urgent issue that demands immediate and decisive action, because further delay serves only to diminish both the availability of options and the potential effectiveness of any solutions that may ultimately be adopted.**

The nation's stock of telephone number resources X the North American Numbering Plan (NANP) is in crisis. Once the envy of the world for its elegant and consistent structure,¹ the NANP and its management have been beset with pressures from divergent stakeholder interests, intransigent and often arbitrary administrative and regulatory policies, and a general

1. The NANP, alone among numbering schemes worldwide, provided a uniform 10-digit format, with a three-digit area code, a three-digit central office code, and a four digit number to identify individual subscriber lines within the central office code. In its original design, area codes could be easily distinguished from central office codes in that the second digit of an area code was always '0' or '1' (the 'N0/1X' format), whereas the second digit of the central office code was never '0' or '1' (the 'NNX' format). By the late 1980s, so-called Ainterchangeable central office codes (i.e., codes of the ANXX format that could have a '0' or a '1' as the second digit) were being assigned in some numbering plan areas (NPA's), and beginning January 1, 1995, all area codes and central office codes were permitted to adopt this interchangeable 'NXX' format. Up until that time, the prefix digit '1' could be used to differentiate between Alocal and Atoll calls, but today the function of the '1' prefix digit is solely to identify the following three digits as an area code rather than a central office code. In most other numbering plans worldwide, there is no uniformity or consistency with respect to the number of digits in area codes or telephone numbers, or in the numbering format associated with each.

lack of vision in its overall management and administration. That there are any winners in the present situation can be debated, but there can be little question but that there have been losers:

- ! Consumers have been forced to accept multiple and frequent telephone number changes and the inevitable diminution in their ability to contact and be contacted by friends and relatives due to these forced and recurring number changes.
- ! Consumers have also been forced to accept and to learn complex new dialing patterns to complete local calls within their communities, creating potential public safety concerns particularly for small children and the elderly, who may encounter difficulties in remembering their telephone numbers and in using the new mandatory dialing protocols.
- ! Businesses have been forced to accept frequent number changes, to expend resources to communicate their new phone numbers to customers and to update their own customer records and databases, and have suffered losses as old customers encounter difficulties in contacting them.
- ! Non-profit institutions and government agencies have been forced to expend resources on maintaining databases and have been forced to cope with increasingly inaccurate records.
- ! New telecommunications service providers have been forced to limit their entry into new markets due to a lack of available telephone number resources, thereby protecting the incumbent carriers' monopoly positions and diminishing competition overall.
- ! New telecommunications service providers have also been forced to accept unfamiliar overlay numbers while the incumbent carriers can continue to offer their customers the more familiar traditional geographic area code, thereby diminishing the desirability of competitor-provided services and increasing entrants' costs and entry barriers.

Since the beginning of 1995, when the interchangeable NXX area code format became available, more than 77 new area codes have been or are currently in the process of being established in 32 states nationwide (see Figure 1). In all, over 75-million, or 70% of all US telephone subscribers have been forced to accept phone number or dialing protocol changes, or both.² In California X the epicenter of the area code crisis X the number of NPAs will have

2. Assuming conservatively that, on average, about one million residential telephone numbers are changed each time an area code is split.

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jumped from 13 just prior to 1993 to 41 by the end of 2002,³ with some customers undergoing as many as four different area code changes within this 10-year period. Comparable conditions have also arisen in Texas, Florida, Ohio, Massachusetts, and New York.

3. Notice of Proposed Rulemaking, *In the Matter of Numbering Resource Optimization*, CC Docket No. 99-200 (ANotice≡), at & 4, citing California Public Utility Commission projections.

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While tens of millions of Americans have been directly impacted by the ongoing number resource crisis, the problem appears to have been viewed by many policymakers as something that people will just have to live with,⁴ a temporary annoyance that people will eventually get over.⁵ Earlier this year, however, a report issued by Lockheed Martin in its capacity as the North American Numbering Plan Administrator (NANPA),⁴ has brought the economic and societal consequences of continued inaction into sharp focus: As the Commission has acknowledged, Although the time frame for NANP exhaust cannot be determined with precision, the NANPA developed two models that predict the NANP will be exhausted in the 2006 to 2012 time frame.⁵ The Commission notes that Preliminary estimates of the total costs (telecommunications industry and societal combined) discussed at the February 1999 NANC meeting established a range of \$50 to \$150 billion.⁶ As we discuss in more detail below, Joint Commenters believe that the exhaust of the present 10-digit NANP *is entirely and permanently avoidable* through the immediate adoption and implementation of effective number resource optimization measures and management processes, and that the possibility of expanding the current 10-digit NANP *should not even be considered a valid policy option as a number resource solution*. Joint Commenters believe that expansion of the 10-digit NANP will engender social and economic disruptions and costs on a scale that rivals X perhaps exceeds X those being attributed to the Y2K computer bug. The Commission should view the prospect of NANP exhaust and expansion as a wake-up call for immediate and decisive action, and not as a solution to the current numbering crisis. In the Comments that follow, Joint Commenters offer their analysis and their specific recommendations for addressing and resolving the present number resource problem. But Joint Commenters cannot overemphasize the critical need for *immediate* action on the part of the Commission and state regulators, for continuation of the protracted delay that has plagued this issue for most of this decade will serve only to eliminate what might otherwise be effective and efficient solutions. If something is not done quickly, NANP exhaust may become inevitable and irreversible, a result that would be nothing short of a national economic and social disaster the responsibility for which will rest squarely and entirely upon industry intransigence and bureaucratic indifference.

4. *Number Utilization Forecast and Trends*, submitted by NANPA Lockheed Martin CIS, Feb. 18, 1999 (ANumber Utilization Study).

5. Notice at & 32, citing Number Utilization Study at 17.

6. Notice at & 34, citing NANC Meeting Minutes, Feb. 17-18, 1999.

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B. States are ready and willing to pursue number optimization measures, and the FCC should immediately issue an interim decision that allows states to pursue measures pending the outcome of this FCC proceeding.

Dealing with area code relief and other number resources issues has proven to be one of the most active and contentious areas of state regulatory activity.⁷ It is also the subject of persistent

7. Arizona Corporation Commission, *Generic Investigation on the Recommendation of the Numbering Plan Administrator for an Area Code Relief Plan In The 602 Area Code*, December 22, 1998, Order - Dec. No. 61301; Illinois Commerce Commission, *Petition for Approval of NPA Relief Plans for the 312, 630, 708 & 773 NPAs*, Docket No. 98-0847, Interim Order issued June 30, 1999; Kentucky Public Service Commission, *Application for Area Code Exhaustion Relief for 606 Region*, Administrative Case No. 377, Filed September 25, 1998; California Public Utilities Commission, *Order Instituting Rulemaking on the Commission's Own Motion Regarding Commission Policy on Area Code Relief*, Rulemaking 98-12-014, December 17, 1998; New Hampshire Public Utilities Commission, *603 Area Code Numbering Relief Plan*, DT 99-603, filed March 16, 1999; Nebraska Public Service Commission, *In The Matter of the Commission, On Its Own Motion, To Conduct an Investigation into the Potential Exhaust of Assignable Telephone Numbers Within the 402 Area Code*, Docket No. C-2057, June 8, 1999; New York Public Service Commission, *In the Matter of an Investigation of the Efficient Usage of Telephone Numbering Resources and Evaluation of the*

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misinformation campaigns by incumbent LECs, who continually seek to shift the blame for the problem to fax machines, modems, and more generally to the onset of competition in the local telephone market.⁸ Ironically, while the state PUCs are the front line in the area code debates, they have been hamstrung in their efforts by several institutional and regulatory conditions that, up to now, have been largely beyond their control:

- ! States generally do not initiate area code relief proceedings or investigations until the affected NPAs are placed administratively in a jeopardy condition by the North American Numbering Plan Administrator (NANPA). The jeopardy condition usually arises 18 to 30 months prior to the projected exhaust date, leaving insufficient time to consider and to implement number resource optimization or conservation measures and confronting the state commission with only the choice between two highly undesirable solutions: a geographic split or an all-services overlay.

Options for Making Additional Central Office Code and/or Area Codes Available in New York State, Case 99-C-0800, July 16, 1999; Missouri Public Service Commission, *Industry Report on Elimination of Protected Codes in the 816 and 913 Numbering Plan Areas (NPAs)*, Order Adopting Industry Report and Recommendation, Case No. TO-99-439, Updated May 10, 1999; Massachusetts Department of Telecommunications and Energy, *Area Code Relief*, Docket No. 99-11, opened January 11, 1999.

8. See, e.g., Comments of US West, Inc., In Response to Public Notice DA 98-2265, *In the Matter of North American Numbering Council Report Concerning Telephone Number Pooling and Other Optimization Measures*, NSD File No. L-98-134, December 21, 1998, at 8.

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- ! The number administration process often affords little or no opportunity for residential, business, institutional and government consumer input to the specific relief solution that will ultimately be adopted.⁹ In general, representatives of service providers (Acode holders≡) will meet in an effort to reach some sort of Aconsensus≡ that is then communicated to the state PUC for ratification; consumers are generally not invited to participate in this Aindustry consensus≡ process, and thus have no forum in which to participate until the matter comes before the regulator, at which point it is usually too late in the process for any major changes in the industry Aconsensus≡ solution even if the regulatory agency is otherwise inclined to do so.
- ! The FCC has imposed serious limitations on the measures available to the states with respect to area code relief and other number resources measures. The Commission has precluded the use of service- or technology-specific overlays,¹⁰ number pooling and related

9. This is not the case in every state, a notable positive exception is California. Due to the frenetic pace at which new NPAs have been implemented there, public and legislative interests resulted in state statutes governing the NPA relief planning and implementation process. These statutes require, among other things, conducting at least three public meetings and one meeting of local government and public-safety officials in each exhausted area code before the industry can submit any relief recommendations to the California PUC.

10. FCC Declaratory Ruling and Order, *In the Matter of Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech - Illinois*, FCC 95-19, IAD File No. 94-102, January 23, 1995 (AAmeritech Order≡).

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conservation measures,¹¹ and has imposed mandatory 10-/11-digit dialing on all home area code calls when an All-services overlay is adopted.

To its credit, the Commission has been addressing numbering resource issues for some time, albeit at a pace that does not appear to fully appreciate the seriousness of the current and future situation. But the current crisis has escalated to a point where the Commission must now consider numbering to be an urgent issue that demands immediate and decisive action. Delay diminishes both the availability of options and the potential effectiveness of any solutions that may ultimately be adopted. The Commission should commit immediately to expeditious, decisive, and *final* resolution of numbering matters. The passage of time works against the effectiveness of many measures by delaying much-needed relief. The Commission should not both preempt state initiatives while at the same time defer acting on the very issues from which the states have been foreclosed.

11. FCC Memorandum Opinion and Order and Order on Reconsideration, *In the Matter of Petition for Declaratory Ruling and Request for Expedited Action on the July 15, 1997 Order of the Pennsylvania Public Utility Commission Regarding Area Codes 412, 610, 215, and 717*, NSD File No. L-97-42; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, September 28, 1998.

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Many states have clearly indicated their desire to move forward on number resource optimization measures. The Commission has received petitions seeking modifications in previously-established limitations on state actions by the California PUC, the Connecticut DPUC, the Florida PSC, the Maine PSC, the Massachusetts DTE, the New York PSC, and the Pennsylvania PUC. These pleadings ask the Commission to revisit its policies on service- and technology-specific overlays, dialing protocols, and number pooling.¹² States bear the brunt of

12. Common Carrier Bureau Seeks Comment on a Petition of the California Public Utilities Commission and the People of the State of California for Delegation of Additional Authority Pertaining to Area Code Relief and to NXX Code Conservation Measures, *Public Notice*, NSD File No. L-98-136, DA 99-928 (rel. May 14, 1999); Common Carrier Bureau Seeks Comment on a Petition of the California Public Utilities Commission and the People of the State of California for a Waiver to Implement a Technology-Specific or Service-Specific Area Code, *Public Notice*, NSD File No. L-99-36, DA 99-929 (rel. May 14, 1999); Connecticut Department of Public Utility Control Files Petition for Rulemaking, Public Comment Invited, *Public Notice*, RM No. 9258 (rel. 1998) (Connecticut Petition); Common Carrier Bureau Seeks Comment on the Florida Public Service Commission's Petition for Authority to Implement Number Conservation Measures, *Public Notice*, NSD File No. L-99-33, DA 99-725 (rel. April 15, 1999); Common Carrier Bureau Seeks Comment on the Maine Public Utilities Commission's Petition for Additional Authority to Implement Number

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consumer concerns about the implementation of new area codes and thus need authority to implement measures to prevent or delay the need for new area codes.

Numbering policy has been caught up in an Analysis paralysis³ that must now be brought to closure. The continuing inaction by the Commission has become part of the problem rather than part of the solution. The Commission should, without further delay, delineate interim measures that are available to the states pending final resolution of national number resource optimization policy. In particular, states should be permitted to pursue any of the following definitive initiatives, the specifics of which we discuss in greater detail below:

Conservation Measures, *Public Notice*, NSD File No. L-99-27, DA 99-638 (rel. April 1, 1999); Common Carrier Bureau Seeks Comment on Massachusetts Department of Telecommunications and Energy Petition for Waiver to Implement a Technology-Specific Overlay in the 508, 617, 781, and 978 Area Codes, *Public Notice*, DA 99-460, (rel. March 4, 1999); Common Carrier Bureau Seeks Comment on Massachusetts Department of Telecommunications and Energy Request for Additional Authority to Implement Various Area Code Conservation Methods in the 508, 617, 781, and 978 Area Codes, *Public Notice*, NSD File No. L-99-19, DA 99-461 (rel. March 5, 1999); Common Carrier Bureau Seeks Comment on New York Department of Public Service Petition for Additional Authority to Implement Number Conservation Methods, *Public Notice*, NSD File No. L-99-21, DA 99-462 (rel. March 5, 1999); Pennsylvania Public Utility Commission Petition for Expedited Waiver of 47 C.F.R. § 52.19 for Area Code 412 Relief, DA 97-675, *Memorandum Opinion and Order*, 12 FCC Rcd 3783.

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- ! *Number pooling solutions.* Having implemented (and charged ratepayers for) Location Routing Number (LRN) -based Local Number Portability (LNP) in most major market areas, the technology needed to support number pooling in any of its various forms is now in place. 1000-block pooling is already operational in Illinois and New York,¹³ and is capable of being implemented at the local level without need for a uniform national policy or practice. States should be permitted, at a minimum, to order 1000-block pooling and to establish thresholds regarding Acontaminated≡ number blocks, as the Illinois Commerce Commission has done. In-place LRN LNP technology is also fully capable of supporting Unassigned Number Portability (AUNP≡), adoption of which could make large quantities of individual numbers available to new entrants without the need for them to establish full 10,000-number NXX codes in each rate center, and there is no reason why states should not be permitted to proceed with consideration and implementation of UNP prior to the adoption of final number resources policies by the FCC.

13. Notice at & 29, footnote 42.

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- ! *Service- and technology-specific overlays.* The Commission has precluded states' use of service- or technology-specific overlays as number relief solutions, on the basis that such measures may competitively disadvantage one service vis-a-vis others. While Joint Commenters take strong exception to that premise (a point that we discuss in detail below), it is without dispute that one of the greatest challenges to the potential effectiveness of any number pooling solution stems from the fact that several categories of service providers have either been exempted altogether from the requirement to participate in local number portability (e.g., paging),¹⁴ or have been allowed a series of deferrals such that no LNP participation will now be required until at least mid-2002,¹⁵ if not further deferred by the Commission. These exemptions and deferrals have in each case been requested by the carriers involved *specifically on the basis of technical impediments to their participation*,¹⁶ although some have argued that even these could be overcome by the infusion of capital by these carriers. At the very least, the Commission should permit states that wish to pursue a number pooling type of solution to immediately require that any service provider that does not participate in LNP either because of an FCC-granted exemption or deferral be transferred out of the geographic NPA and into an overlay NPA that has been specifically established for *non-LNP-capable* services. Such authority should include the right to require that existing customer numbers be transferred to the new NPA, much as has been required for conventional wireline telephone subscribers in the case of geographic splits.
- ! *Dialing protocols.* The FCC has required that, where an all-services overlay solution is adopted, *all* calls, including those to numbers within the calling party's home area code, be dialed on a uniform 10- or 11-digit basis, i.e., including the home area code in the dialing protocol. In January, 1998, the New York PSC sought a waiver of this requirement with respect to the '212' area code in New York City, which was in the process of being overlaid by a new '646' area code.¹⁷ The PSC argued that the expanded number of digits required to be dialed on all local calls represented a public safety problem given the difficulties that young children and persons with Alzheimer's disease have in remembering 10-digit phone

14. First Report and Order and Further Notice of Proposed Rulemaking (First Report and Order), CC Docket No. 95-116, July 2, 1996, at & 156.

15. Forbearance from Commercial Mobile Radio Services Number Portability Obligations and Telephone Number Portability, *Memorandum Opinion and Order*, WT Docket No. 98-229 and CC Docket No. 95-116, FCC 99-19, released Feb. 9, 1999, at & 1.

16. First Report and Order, at && 144-148.

17. DA 98-1434, *In the Matter of New York Department of Public Service Petition for Expedited Waiver of 47 C.F.R. Section 52.19(c)(3)(ii)*, NSD File No. L-98-03, released July 20, 1998. (New York Petition)

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numbers.¹⁸ The Commission allowed a temporary waiver pending the adoption of an overlay of the '718' NPA covering the remainder of New York City,¹⁹ but declined to address the specific public safety issues that the NY PSC had advanced. These are inherently *local* issues and the states should be authorized to make findings as to the relative importance of dialing parity vs. legitimate public safety concerns, and to have the flexibility to consider the merits of overlay solutions without the need to accept any mandatory dialing protocol requirements.

Even on a permanent basis, it is critical that the FCC leave room for states to adopt policies and solutions that reflect local concerns and conditions. There is no single Acorrect≡ solution that will address and resolve all possible stakeholder concerns, and states should be afforded the flexibility to address and resolve conflicting positions in the best interests of their respective communities. FCC national guidelines should focus upon broad policy goals, not specific implementation strategies. In that context, the Commission should prescribe and preempt states from taking actions that are inconsistent with its goals, but should not limit states' flexibility in achieving them. The key goals are well-stated in the *Notice* itself:

18. Telecommunications Reports, Numbering Council Questions New York PSC's AOverlay≡ Plea, February 16, 1998.

19. New York Petition, at && 1, 16.

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- ! Assure availability of numbering resources to all service providers;²⁰
 - ! Minimize impacts upon consumers and overall societal costs associated with number resource policy;²¹
 - ! Maintain maximum competitive neutrality in number resource policy and administration;²² and
 - ! Prevent, for as long as possible, the exhaust of existing number resources within the North American Numbering Plan.²³
- C. The FCC should move forward on as many measures as possible, rather than focusing on only a few limited solutions.**

20. Notice, at & 6.

21. *Id.*

22. *Id.*

23. *Id.*

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The urgency of the numbering crisis justifies concerted effort by federal and state regulators on many number optimization measures rather than reliance on a limited number of solutions. The FCC should move forward expeditiously on all three LRN-based forms of pooling (thousands-block pooling, unassigned number porting, and individual telephone number pooling), enhancing accountability and increasing efficiency in the management and utilization of number resources (through substantive changes to and enforcement of the Central Office Code Assignment Guidelines), and service- and technology-specific overlays. States are in the best position to evaluate the merits of rate center consolidation and to coordinate such efforts with other number optimization measures. Until the FCC authorizes states to pursue these and other number optimization measures, states will be inappropriately hampered in their effort to prevent premature NPA exhaust. Therefore, the FCC should also unambiguously authorize states to adopt number optimization measures so that state PUCs, as well as the FCC, can move forward on many fronts to resolve the numbering crisis. No single measure is likely, in isolation, to prevent the exhaust of the NANP.

D. Number resource optimization measures and number assignment policies should minimize the cost to consumers and to society.

The FCC has expressly acknowledged the substantial costs to consumers, businesses, and to society in general attributable to changes in telephone numbers and dialing patterns.²⁴ The Commission specifically agrees with the positions of consumers and business users, finding that A[c]oncerns regarding the financial and societal costs of area code relief are well-founded.²⁵ The Commission also recognizes that A[t]he introduction of a new area code carries with it a significant number of costs and burdens that are sometimes difficult to quantify.²⁶ Joint Commenters echo and underscore the FCC's concerns as to these societal impacts and burdens. Moreover, Joint Commenters emphasize that the fact that such impacts and burdens may be difficult to measure and to quantify in no sense diminishes their importance and their *relevance* when evaluating numbering solutions whose implementation costs *as incurred by telecommunications service providers* may be subject to more specific quantification.

24. *Id.*, at && 22-25.

25. *Id.*, at & 22.

26. *Id.*

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These recognitions by the Commission X that significant consumer/user/societal costs and impacts are invoked by traditional area code relief measures (i.e., splits and overlays) *and* that their measurement may elude explicit quantification X are by themselves an important step forward in the number resource optimization debate. Up until now, industry-initiated Asolutions≡ have largely ignored such societal impacts and burdens, or have insisted upon specific quantification before they could be considered. While some service providers X particularly incumbent LECs X have sought reimbursement for their own area code relief costs,²⁷ to the best of our knowledge *none have ever offered or been required to reimburse consumers and other telecommunications users for any tangible costs they may have been forced to incur in dealing with an area code split or overlay.*²⁸

27. Illinois Bell included in its 1996 annual rate filing an exogenous change or AZ≡ factor, to recover the 1995 expenses (approximately \$6 million in) associated with two area code splits in the Chicago area, which the Illinois Commerce Commission denied. ICC Docket No. 96-0172, *Illinois Bell Telephone Company Annual Rate Filing for Noncompetitive Services Under an Alternative Form of Regulation*, Hearing Examiner Proposed Order, May 24, 1996, at 2.

28. The Commission notes that Abusinesses also bear significant costs when they, or their customers, are subject to area code relief. Tangible costs may include those associated with reprogramming or replacing telecommunications equipment such as private branch exchanges (PBXs), updating customer databases that contain phone number fields, and reprinting advertising and stationery. Certain industries are uniquely harmed by the transition to a new area code; alarm

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Societal costs include both direct monetary expenditures by consumers as well as disruptive and inconvenience effects of number and dialing pattern changes.²⁹ Also included as intangible costs and burdens would be certain public safety concerns arising from the possible inability of small children and the elderly to remember the additional digits and new dialing patterns if ten digit dialing is required on all calls either as part of an all-services overlay or as a nationwide policy.³⁰

- E. Numbering policies and optimization/relief measures should be designed to minimize consumer and societal costs and burdens and, within that context, to maximize competitive neutrality.**

systems, for example, generally must be individually reprogrammed or even replaced to accommodate changes in dialing patterns.≡ Notice, at & 23.

29. The Commission observes that such A[i]ntangible costs to consumers may include the loss of a community's geographic identity and many other costs which are difficult to quantify,≡ and that A[i]ntangible costs to businesses associated with a change in area code may include a loss of goodwill when customers have difficulties reaching the intended business.≡ *Id.*, at && 22-23.

30. *Id.*, at & 125.

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The primary focus of the FCC's numbering policies should be to minimize consumer costs and burdens and to minimize total societal costs. Within that overarching framework, the FCC should then seek to maximize competitive neutrality. A central focus of the FCC's numbering policies has been competitive neutrality in number assignment and dialing pattern. For example, the Commission's holding in the *Ameritech* Declaratory Ruling preempting states from establishing service- or technology-specific overlays (e.g., for wireless services) was expressly premised upon the notion that wireline and wireless services are directly competitive with one another, and that the segregation of wireless services into separate and distinct NPAs would disadvantage them if the use of the more familiar geographic area code were limited to wireline services only.³¹ Similarly, in mandating the use of 10- or 11-digit dialing where a state commission adopts an all-services overlay solution, the Commission's goal was to assure dialing parity as between carriers who continue to use and to assign the familiar area code vis-a-vis those who could only obtain numbers in the overlay code.³² As a general matter, Joint Commenters support the FCC's attempt, in its preliminary evaluation of particular number optimization measures, to minimize the potential for disproportionate impact of specific numbering policies upon new entrants relative to incumbent carriers. At the same time, however, we feel compelled to remind the Commission that none of these policies are perfect solutions, and that all possess certain consumer and societal consequences that must not be ignored.

Consider, for example, the matter of service- or technology-specific overlays. By enforcing this policy, the Commission has, up until now, required states to choose between a geographic split and an all-services overlay as the only available area code relief measures. Geographic splits force roughly half of all subscribers to undergo a number change and force all subscribers in the affected NPA to dial additional digits (i.e., the other NPA) on at least some calls. All-services overlays force all customers in the affected NPA to accept mandatory 10-/11-digit dialing on all calls. From the perspective of competitive parity, it is not at all clear that an all-services overlay is any less discriminatory than a service- or technology-specific overlay; indeed, there is a strong reason to believe that exactly the opposite is the case.

A service- or technology-specific overlay is competitively discriminatory *if and only if* the services in the original and in the overlay area codes are actually direct competitors for one another. Consider the use of a technology-specific area code overlay for mobile services, i.e.,

31. *Ameritech* Order, at ¶ 38.

32. Pennsylvania Public Utility Commission Petition for Expedited Waiver of 47 C.F.R. § 52.19 for Area Code 412 Relief, DA 97-675, *Memorandum Opinion and Order*, 12 FCC Rcd 3783. The Bureau held that the disparity would create hardship for new entrants entering the Pittsburgh market and would undermine the pro-competitive objectives underlying the Commission's ten-digit dialing requirement for area code overlays.

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wireless services. In today's marketplace, wireline and wireless services are not perfect substitutes; that is, wireline ILECs currently compete directly with wireline CLECs, while wireless incumbent carriers compete directly with competitive wireless carriers. The imposition of an area code overlay for wireless services would not *per se* impose any kind of competitive disadvantage precisely because each technology is treated similarly with regard to numbering. Moreover, we provide further detail later in these comments that the conclusion can be drawn that implementation of an all-services overlay is *more* discriminatory to new entrants than a technology-specific overlay, due to the fact that new entrants in *both* the wireline and wireless service markets will be forced to assume numbers in the newly introduced NPA due to the significant quantities of numbers in the initial NPA already held by incumbent carriers.

While we address the issue of service- and technology-specific overlays in more detail below, the purpose of the present discussion is to underscore the fact that any policy has its consequences, some of which may well be unintentional or even contrary to the express purpose of the policy itself. By precluding service- and technology-specific overlays because of apparent competitive disparity, the Commission may well have fostered a far more profound and permanent disparity favoring incumbents over entrants. Furthermore, any efforts by the Commission to establish competitively neutral numbering policies should be undertaken within the larger context of minimizing total societal cost. Either the Commission itself needs to recognize these trade-offs and side-effects of its policies, or permit the states to do so by eliminating the outright prohibitions that are presently in place.

F. Exhaust of available NPAs and expansion in the number of digits in the NANP should be off the table, i.e., not considered to be a policy option.

The 10-digit North American Numbering Plan as it is presently structured provides a theoretical capacity of approximately 6.4-billion unique telephone numbers.³³ The Lockheed

33. There are 792 possible area codes and service access codes (this assumes that 'N11' codes are not used for this purpose). A geographic area code has a theoretical capacity of 792 central office codes, although the quantity is usually slightly less due to the deliberate exclusion of certain digit sequences, such as those used for adjacent area codes, from assignment within an NPA. Service

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Martin Number Utilization Study identifies 328-million numbers in use as of February, 1999.³⁴ Thus, under the present NANP structure, nearly 6-billion, or 95% of the theoretical capacity of the NANP, are still available for assignment to customers.

access codes (SACs) have a theoretical capacity of 1,000 central office codes, since codes of the 0XX and 1XX format may be assigned in a SAC. Each central office code has a capacity of 10,000 individual numbers.

34. Number Utilization Study, at 8. Lockheed identifies 202-million ILEC numbers in use, 8-million CLEC numbers in use, 70-million CMRS numbers in use, and 49-million paging numbers in use.

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The difficulty lies in the fact that the NANP is highly fragmented. Individual NXX codes are currently confined to a single rate center and to a single carrier within that rate center. NPAs are generally confined to a single state, province (in the case of Canada), or country (in the case of the Caribbean³⁵). While some of this fragmentation is inherent in any geographically-based numbering plan, a good deal of it can be eliminated through effective number resource management. Number pooling in any of its various forms can enable several carriers to share the same NXX code within the same rate center. Rate center consolidation can allow the same NXX codes to be used over a wider geographic area. Service- and technology-specific non-geographic overlays and service access codes can allow the same 3-digit area code to cover a wider geographic area, or (for example, in the case of 800/888/877) the entire NANP region (so-called World Zone 1). While each of these solutions creates certain costs and other impacts, these pale when compared with the potential cost of expanding the NANP. In fact, the Commission itself appears to agree with this conclusion: AThese estimated costs [of expanding the NANP] are substantial, and would, we believe, significantly outweigh the cost of implementing all or most of the numbering resource optimization solutions proposed in this Notice.³⁶

The Commission Anote[s] that available estimates for the total cost of expanding the NANP vary greatly; preliminary estimates of the total costs (telecommunications industry and societal combined) discussed at the February 1999 NANC meeting established a range of \$50 to \$150

35. This is actually a recent development. Prior to 1995, all 16 Caribbean countries, together with Puerto Rico and the US Virgin Islands, shared the '809' area code. When interchangeable codes became available after 1995, separate area codes were assigned to each country creating a total of 18 NPAs where there previously had been only one. Many of the new NPAs have extremely few NXX codes; Anguilla and Turks & Caicos, with the fewest, currently each have only two working NXX codes within their NPAs (262 and 649, respectively). It would appear that whoever made the decision to further fragment the NANP in this manner did not contemplate the fact that this action would serve only to accelerate the exhaust of NANP NPA codes.

36. Notice, at & 34.

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billion.³⁷ Precise quantification of the total societal costs that would be invoked by an expansion in the number of digits in the NANP is difficult, although at least some of the sources of such costs can be readily identified:

! Implementation of a NANP expansion would require many years to accomplish and would necessarily have to be done in stages. For example:

Stage 1: Adopt and implement mandatory 10-digit dialing on all calls; permissively, then permanently, eliminate the '1' prefix digit.

Stage 2: Permissively introduce the expanded area code format (e.g., four digits), the use of which would be identified by the prefix digit '1'. At the conclusion of the permissive dialing period, make the 1+NXXX+NXX+XXXX format mandatory.

Stage 3: Possibly re-introduce 7- or 8-digit dialing without the use of the prefix digit '1'. For 8-digit dialing, the fourth digit of the expanded area code would be used as the initial digit for local area calling, which would imply that the expanded NANP area code format would be created in clusters using an NXX-N format, where the first three digits would identify the general area (e.g., an entire state or portion thereof, such as the Los Angeles metropolitan area), with the fourth digit serving as a Alocal \equiv area code.

37. *Id.*, citing NANC Meeting Minutes, Feb. 17-18, 1999.

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Expansion of the NANP, were it to occur, might also be an opportunity for the US to adopt the ITU numbering format in which an area code is identified by the prefix digit '0' instead of '1'. An industry committee has already begun work on specifying an expanded NANP format,³⁸ and many different possibilities are apparently being proposed and evaluated. There is no definitive estimate of the length of time that implementation of an expanded NANP format might take; the Commission has suggested a possible range of between two and ten years,³⁹ but these figures appear to have been advanced more for the sake of discussion than as actual projections. ILECs typically require between 6 and 18 months for switch and routing table reprogramming in order to introduce a new area code either via a geographic split or an all-services overlay.⁴⁰ ILECs describe this as an extremely labor-intensive, manual process that only a limited number of individuals are qualified to perform.⁴¹ Apparently, the creation of a new area code does not typically require or involve any modifications or upgrades to the switch software itself, only to routing tables. A change in the NANP format, however, would undoubtedly require carriers to purchase, install and test operating system upgrades prior to the manual entry of new routing information. Work force additions would undoubtedly be required, which would itself involve time for recruitment and training, and with the increased use of less experienced personnel the potential for error will be increased. If it takes as long as two years to create just one new area code, it is difficult to imagine how a complete revamping of the NANP could be accomplished in less than ten. Indeed, we are not even close to establishing what the new numbering format would look like; no formal proposal has yet been advanced, and any such proposal would necessarily require time for public comment and Commission consideration. To the extent that the revised NANP format involves Canada and the Caribbean countries, in addition to the United States, multi-national committees and task forces would also need to be convened and their inputs considered. Assuming that at least two years would be required for the design and approval of a new NANP format, coupled with ten years for implementation, it is difficult to imagine how this task could be accomplished any sooner than 2011, a date that lies beyond Lockheed Martin's projected exhaust date assuming no change from the existing number assignment practices or implementation of number conservation measures. It is painfully obvious that even if NANP exhaust is considered to be inevitable, which it is not, expansion of the NANP cannot substitute for immediate adoption of number resource optimization and

38. See North American Numbering Plan (NANP) Expansion Report, Draft (rev. March 1999). This document is available at <<http://www.atis.org/atis/clc/inc/incwdocs.htm>>.

39. Notice, at & 33.

40. Illinois ICC Docket No. 97-0192, *Citizens Utility Board Petition to Implement a Form of Telephone Number Conservation Known as Number Pooling within the 312, 773, 847, 630 and 708 area codes*, and Illinois ICC Docket No. 97-0211, *Illinois Bell Telephone Company Petition for Approval of an NPA Relief Plan for the 847 NPA* (Consol.), Order, May 6, 1998, at 28-29; NANC Report, at Sections 12.1 and 14.1.

41. Illinois ICC Docket Nos. 97-0192/97-0211 (Consol.), Order, May 6, 1998, at 27.

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conservation measures if adequate numbering resources are to continue to be available for at least the next decade.

In fact, the costs and disruptions associated with NPA exhaust and NANP expansion are so massive that virtually any measure that avoids this result will be preferable. Consider the following:

- ! ILECs have put the costs associated with a single area code relief effort at roughly \$8-million.⁴² The additional complexities associated with NANP expansion, coupled with the need to acquire new switch software, the requirement to use less experienced personnel, and the need to process several different Astages[≡] in the transition (see above), would conservatively be expected to double, triple, or perhaps even quadruple this cost on a per-area code basis. By the time that NANP expansion ultimately takes place, nearly all of the 792 possible area codes and SACs will have been cut into service. At up to \$40-million per area code and 792 area codes to be dealt with, the costs incurred *by ILECs alone* could approach or exceed \$30-billion.
- ! But ILEC costs would constitute the tip of the iceberg. CLECs, IXCs, and CMRS providers would also need to modify and upgrade their switches and routing tables. Each of the 100-million or more wireless phones that will be in use at the time of NANP expansion would need to be upgraded in some manner to transmit the expanded number format. If such phones cannot accommodate telephone numbers having more than ten digits, replacement of much of the installed base may be required. Even if we assume that the cost of wireless phones drops to \$100 by the time that NANP expansion occurs and that 100-million phones will need to be replaced, the costs of this replacement could approach \$10-billion.

42. Illinois ICC Docket No. 96-0172, Illinois Bell Telephone Company Annual Rate Filing for Noncompetitive Services Under an Alternative Form of Regulation, Exhibit 3, Proposed Exogenous Change, March 31, 1996.

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- ! Based on the foregoing, \$50-billion appears to be a reasonable order-of-magnitude estimate of the costs that would be incurred *by telecommunications service providers* to accommodate NANP expansion. Those costs, however, would pale when compared with the tangible and intangible costs that will be imposed upon the rest of the US economy and society in general. Virtually every business, government and institutional computer system and database that includes telephone numbers will need to be modified. The software modifications alone will rival those associated with the AY2K≡ problem, which some have estimated at exceeding \$76-billion in the US alone.⁴³ In addition to the software modification costs, hundreds of thousands of individual data bases, large and small, will need to be revised to reflect the new expanded 11-digit telephone numbers. If we assume, conservatively, that every American appears in 100 different data bases (probably much more than that), and assume (again conservatively) that the cost of revising each data base record is one dollar, another \$30-billion or so will be required for this task alone, in addition to the \$76-billion or more in reprogramming outlays.
- ! It is also highly likely that, with the sheer mass of switch routing entries that will be required and which will be done, for the most part, manually, there will be widespread coding errors and routing failures, creating conditions where telephone calls will simply not be able to be completed. Experience with individual area code splits has revealed all too often that such errors are to be expected and that weeks or even months may be required before they are fully addressed and resolved. Multiply this by 792 area codes and a fundamental change in the dialing and numbering format, and the connectivity problems could go on for months or years.
- ! Systems and equipment that rely upon automatic dialing devices (alarm monitoring services, point-of-sale terminals) will need to be manually reprogrammed and, in some cases, replaced altogether if their digit-handling capacity is limited to the current NANP format. Extended permissive dialing periods will be required, and it is possible that a premises visit will be necessary for each and every such dialing device.
- ! Business, government and institutional private branch exchange (PBX) telephone systems will all need to be upgraded to accommodate the expanded numbering format. In some cases, older systems will need to be replaced. Emergency reporting (E-911) systems will also need to be upgraded to accommodate the new numbering format X particularly in communities that are split by an area code boundary X and the possibility that system failure will arise in some (unknown fraction of) emergency situations cannot be discounted.

43. Domsch, Matt, Cost and Scope of the Year 2000 Problem, Vanderbilt University, available online at <<http://www.vuse.vanderbilt.edu/~johnsonj/cs387/y2kcosts.html>>.

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Whatever the costs of NANP expansion ultimately turn out to be, they will constitute a deadweight loss to the US economy in that, despite the huge commitment of capital and human resources, the effort will do nothing to increase the nation's productivity or GNP. Indeed, the diversion of economic and human resources to this fundamentally *nonproductive* undertaking and away from the ongoing expansion of the country's stock of capital could well plunge the nation into recession, particularly if the NANP expansion occurs at the wrong stage of a business cycle.

For all of these reasons, the possibility of NANP exhaust and expansion should be taken off the table as an unthinkable outcome of US number resource policy. Joint Commenters believe that the FCC should reject outright any number resource solution that would not work to avoid NPA exhaust. Continuation of the current status quo with respect to number assignment practices and policies would not satisfy this requirement, because it will inevitably lead to NANP exhaust. None of the pecuniary, sometimes parochial, and frequently self-serving positions of the various telecommunications industry stakeholders can possibly warrant continuation of policies and practices under which NANP exhaust becomes an inevitable outcome. It is essential that the Commission consider the costs, burden and potential anticompetitive consequences of any of the proposed number resource optimization solutions in the context of this entirely unacceptable alternative.

II. ADMINISTRATIVE MEASURES

A. The FCC is correct in its assessment that policy objectives surrounding number administration are of critical importance.

Joint Commenters strongly agree with the Commission's conclusion that lack of discipline in the process by which numbers are administered and allocated is a major driver of number exhaust. Maintaining the *status quo* can only result in a perpetuation or expansion of the problems that the Commission has observed. While Joint Commenters oppose the imposition of unnecessary administrative requirements, under the present circumstances there are compelling grounds to tighten the controls on number allocation. Although there may be some additional burden associated with the administrative measures that the FCC identifies (transforming voluntary guidelines into mandatory ones, enhanced reporting procedures, implementing audit mechanisms, creating incentives for compliance, etc.), that burden pales in comparison to the societal costs that result from the constant addition of new area codes or that would occur with NANP exhaust.

Furthermore, the FCC should affirmatively and unambiguously authorize states to implement and to enforce the various administrative measures discussed in the NPRM. During a time of crisis, it is entirely inappropriate for states to be required to rely upon the industry's voluntary efforts to improve the utilization of numbering resources. Such reliance is particularly ill-advised in light of the fact that the industry itself often cannot reach agreement on many critical numbering issues.

Tightening up the administrative controls for number resource allocation is necessary to raise the level of carrier accountability for number utilization and to constrain carriers from obtaining and stockpiling numbers over and above their reasonable short-term requirements. Although the FCC has mandated independent management for NANPA, the industry still has direct control over many key decisions. In particular, the ILECs still dominate the debate in many of the industry organizations that deal with number administration. The ILECs undoubtedly contribute significant expertise in the area of numbering administration. However, in the current numbering crisis, the public interest requires that number conservation be given a priority that may conflict with the short-term interests of industry participants. Thus, Joint Commenters concur with the FCC that under the current system for allocation of numbering resources...it is difficult for the industry to police itself effectively, given that each carrier has an incentive to obtain as many numbers as possible, especially in places where area codes are rapidly reaching exhaust.⁴⁴

44. Notice, at & 35.

Administrative Measures

Furthermore, even if voluntary guidelines and standards may have sufficed in a non-competitive environment, there are additional challenges associated with number administration in a multi-carrier environment that require a firmer and more structured approach. Through the adoption of rules that define terms, set utilization standards, establish reporting requirements, and provide for more systematic auditing of number use, the Commission can add the necessary degree of accountability to the frameworks that the industry has developed.

Having a uniform set of definitions for number status would enhance the ability of the FCC, states, and the industry to do a better job of number administration. As the Commission notes, the industry has already devoted substantial effort to establishing uniform number status definitions.⁴⁵ Nonetheless, as the Commission points out, there are still ambiguities, overlap, and inconsistencies in the definitions that prevent them from being efficiently and uniformly applied.

Were there no urgency to reforming number resource management, it might be sufficient for the Commission to simply identify the areas of deficiency and give the industry committees a directive to remedy the existing guidelines in these areas. However, the need to move quickly and decisively argues against the consensus-driven process that has typically been used by the industry groups. The FCC has invited NANC to make specific recommendations regarding the administrative measures proposed in Section IV of the NPRM and to also express its views as to which of the proposed measures should be adopted as FCC rules. While that input is entitled to significant weight, the Commission should move forward to improve the effectiveness of the central office code assignment guidelines and should allow states to do the same.

Moreover, setting rules external from the industry groups allows the FCC and state PUCs to balance the interests of ILECs, who frequently dominate in industry fora, and new entrants, who claim, with some justification, to be competitively disadvantaged by certain of the industry's recommendations. This is an important protection to the Commission's pro-competitive policies and those of the 1996 Telecommunications Act. The joint efforts of federal and state regulatory agencies, in tandem with industry efforts, are needed.

B. The FCC should enforce specific rules and procedures for numbering administration.

Categories of number usage, generally:

As previously stated, Joint Commenters support the adoption of rules by the Commission, with the objective of accelerating the time-sensitive and economically critical task of reforming numbering administration. Joint Commenters agree that inconsistencies, gaps, and ambiguities in the definitions of key categories used to describe the status of numbers should be addressed and supports incorporating definitions into the Commission's rules. To the extent that the

45. *Id.*, at & 40.

Administrative Measures

Commission perceives a need to reform the existing categories, the Commission should strive to keep the definitions as straightforward and objective as possible, providing flexibility expressly where needed, rather than through ambiguity. Particular attention should be paid to the definition of categories where large quantity of numbers have traditionally been stockpiled (e.g., reserved numbers).

Verification of need for numbers

Joint Commenters fully support the Commission's proposal to increase industry accountability for the assignment of numbers. Plainly, the current system does not provide sufficient limits on carriers' requests for additional codes. The fact that as an NPA approaches a jeopardy situation, carriers' incentive to obtain surplus number inventories increases further supports the need for federal and state regulators to take a more active role in promoting number optimization.

The current practices for assigning codes appears to rely entirely too much on unsupported projections by carriers, rather than demonstrated need. Joint Commenters support the Commission's proposal to require a demonstration of need for assignment of growth codes and recommends that this demonstration include a utilization threshold. The alternative of having the Commission establish an acceptable range of utilization levels, with the specific rate set at the state commission, sets a reasonable balance. Some accommodation of carriers' unique constraints (in order to serve specific consumer demand that could not otherwise be met) may be appropriate in setting utilization requirements, but such exceptions should be subject to state PUC review and approval.

Reserved telephone numbers:

Joint Commenters agree with the Commission and others who have proposed that large loopholes in the existing definition and procedures regarding reserved numbers need to be eliminated. Joint Commenters will address this issue in more detail in their Reply Comments.

Carriers' documentation of need for growth codes/utilization levels:

Joint Commenters concur with the FCC that NANPA should be prohibited from allocating additional numbering resources to an applicant unless the applicant has made a satisfactory demonstration of need.⁴⁶ Also, the FCC should authorize states to establish utilization levels which that must attain before obtaining additional growth codes. In establishing utilization levels, the FCC and state PUCs should avoid imposing unfair burdens on new entrants, who could be disproportionately affected by the establishment of fill rates because they may not have

46. *Id.*, at & 60.

Administrative Measures

had the opportunity to assign numbers and/or barriers to entry may have prevented them from assigning numbers.

Reporting/Record-keeping:

As the FCC states, the current data reporting system is outdated and was designed when the local exchange was largely a monopoly.⁴⁷ Joint Commenters fully concur with the FCC that it is necessary to strengthen the current system for forecast and utilization data collection to improve accuracy of NANPA's predictions and to deter hoarding and other abuses of the system for allocating and administering numbering resources.⁴⁸

States need access to timely, accurate information about actual and forecast numbering utilization. The FCC should explicitly authorize states to mandate the submission of information to state public utility commissions and to state consumer advocates. There is a general sense that public disclosure of number utilization rates by individual carriers could competitively disadvantage the disclosing carrier and benefit its rivals. The FCC should evaluate the merit of such concerns, and balance them against the benefits to effective number resource management of requiring accurate disclosure and reporting of utilization by all carriers.

Joint Commenters concur that the Central Office Code Utilization Survey (COCUS) is an inadequate tool,⁴⁹ and urges the FCC to direct NANPA to replace COCUS with a more detailed, frequent, and comprehensive reporting tool such as the Line Number Utilization Survey (LINUS). The LINUS would survey forecast data quarterly at the rate center level and collect utilization data at the thousands-block level by rate center (quarterly in the largest 100 MSAs and semiannually in the other MSAs).⁵⁰ Regardless of the forecasting tool used, carriers who fail to provide the requested information to state PUCs, the FCC, and/or to NANPA should be denied further access to numbering resources.

47. *Id.*, at & 70.

48. *Id.*, at & 69.

49. *Id.*, at & 72.

50. *Id.*, at & 81.

Administrative Measures

The NPRM indicates that A[s]ome commenters have voiced particular concern about the ability of state commissions to protect the confidentiality of their submissions.⁵¹ The FCC should discount these concerns. State PUCs and consumer advocates have a long history of protecting confidential information that the industry provides. At the same time, the FCC should assess the relative importance of affording carriers such confidentiality if by so doing it enables individual carriers to obtain and hoard NXX codes that would otherwise not occur under a system of mandatory public disclosures.

Joint Commenters concur with the FCC's proposal that a comprehensive audit program be implemented to verify carrier compliance with federal rules and industry numbering guidelines but also should authorize states to undertake audits.⁵² Furthermore, the FCC should keep states apprised of any federal audits. Comprehensive audits could occur at the wire center level, with the detailed audit results being made available to PUCs and to public advocates. Public disclosure of the utilization level should occur in a more aggregate manner, such as by area code.

The FCC should unambiguously indicate that state PUCs have audit authority, which they can delegate, as appropriate, to state consumer advocates or to other competitively-neutral parties. Joint Commenters do not seek to unnecessarily duplicate federally initiated audits, but believe that it is essential to permit states, where appropriate, to direct audits that complement those undertaken at the federal level. Joint Commenters concur with the FCC that Astate commissions should have a major role in the development⁵³ of the framework and procedures for numbering resource audits.⁵³ Because of the major role that many state consumer advocates have taken in numbering proceedings, the FCC should also explicitly include state consumer advocates in auditing programs.

Adequate enforcement measures are essential to deter squandering of numbering resources. Presently carriers face no sanctions if they abuse the numbering allocation and administration

51. *Id.*, at & 78, citing AirTouch comments and PCIA comments.

52. *Id.*, at & 83.

53. *Id.*, at & 90.

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process. Joint Commenters concur with the FCC's tentative conclusion that the NANPA be empowered to withhold NXX codes as a sanction for violation of the CO Code Guidelines.⁵⁴ States, too, should be authorized to enforce compliance with central office code assignment guidelines. Finally, Joint Commenters concur with the FCC's tentative conclusion that the FCC should delegate additional authority to state commissions to order NXX block reclamation.⁵⁵

54. *Id.*, at & 92.

55. *Id.*, at & 100.

III. RATE CENTER CONSOLIDATION

A. Rate center consolidation can be effective in extending the life of a relatively new NPA, but cannot substitute for other number resource conservation measures.

As the Commission correctly observes, under A... the current nationwide numbering scheme, ... the ten-digit telephone number serves not only as a network Address,⁵⁶ but also conveys information to the network as to how phone calls should be routed and billed.⁵⁶ Indeed, *routing* and *rating* are the two principal functions of any telephone numbering scheme, and although most telephone numbers support both of these functions, these uses do not precisely overlap one another. Call *routing* requires that a telephone number convey a unique network Address⁵⁶ that, at a minimum, identifies to the network the central office switch that serves the end user and the line number within that switch to which the incoming call is to be delivered. The number itself does not convey any specific connection path or route from the calling to the called party; that function is accomplished by one or more references to network routing tables during the course of the call setup process. Where a given central office switch serves more individual telephone numbers than can be accommodated within a single 10,000-number NXX code, multiple codes will be assigned to the switch, all of which are equivalent and synonymous (from the perspective of the rest of the network) for network routing purposes. All else being equal, number utilization rates will tend to be proportionately greater in large central office switches (e.g., ones serving 50,000 lines or more) than in small switches (e.g., ones serving a few hundred to a few thousand lines).

56. *Id.*, at & 2.

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The *rating* function of telephone numbers overlaps the routing function to some extent, but the mapping is anything from precise. The basic rating unit is the Arate center \equiv or Arating area, \equiv a telephone company-designated geographic region from which all outward calls, or to which all inward calls, are treated identically for rating purposes.⁵⁷ A given 6-digit NPA-NXX sequence can be associated with one and only one rate center, although there is no limit on the quantity of such codes that can be mapped to a rate center. Indeed, there is no requirement that all codes within a given rate center use the same NPA or have any other attributes in common, for that matter. There is also no requirement that all NPA-NXX codes associated with a particular central office switch be defined in the same rating area, and there are in fact numerous instances throughout the country in which intraswitch calls are rated as if some non-zero distance were involved in transporting the call between the caller and the recipient. In short, while there is some *general* relationship between the rating and routing functions, the two can, and in many cases do, operate as if they are entirely separate numbering systems.⁵⁸

57. The Arating area \equiv for outward calling need not be identical with that for inward calling. For example, CMRS services typically offer subscribers extended local calling areas in some cases covering an entire state or region. *See id.*, at & 112. AT&T's *Digital One Rate* offers nationwide outward calling without any additional charges, and Sprint PCS has similar offerings within its service areas. With respect to *inward* calls to these CMRS telephones, the calling area is defined by the carrier from which the call is placed, most typically a wireline LEC, and generally makes no distinction as to the applicability of local vs. toll rate treatment based upon the fact that the called number is a wireless phone.

58. The Commission explains that A[f]or most carrier billing systems, the rate centers associated

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with the switches serving the calling and called parties are used to determine whether a call is local or toll and to compute the air mile distance for rating the toll call.≡ *Id.*, at & 111, footnote omitted.

While this statement is generally (although not universally) correct with respect to ILECs, it is not the case for most other carriers, and is certainly not itself an explicit requirement of the NANP. In fact, many CLECs will associate a collection of NXX codes rated in a number of different rate centers with the same CLEC switching entity, *the precise location of which is entirely immaterial for call rating purposes*. Although less frequent, ILECs may also engage in this practice, particularly where several different central offices have been consolidated into a single switch but without modifying the historic rate center structure.

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For most ILECs, the present rate center structure was likely established perhaps a century ago, long before the invention of the dial telephone and certainly long before the present network technology and architecture was in place. From the early days of the telephone network and perhaps up until the mid-1980s, the *distance* between the calling and called parties had some effect upon the total cost of the call, and so it was reasonable to include distance as a pricing element both in local and in long distance rate structures. Granularity in the definition of individual rating areas permits extreme granularity in the computation of distance and application of distance-based rates, and so it is quite common for ILECs to have defined large numbers of extremely small rating areas. For example, in the Eastern Massachusetts LATA (corresponding to the 617, 781, 508 and 978 NPAs, there are a total of 203 separate rating areas.⁵⁹ In contrast, the '212' NPA, covering the Borough of Manhattan in New York City, has only one rating area;⁶⁰ indeed, the longevity of the '212' area code despite the intense level of telecommunications activity in Manhattan can be largely explained by the relative lack of rating area fragmentation that plagues many other NPAs.⁶¹

Today, distance is for all intents and purposes no longer a cost driver. Indeed, all of the major long distance carriers have all but abandoned distance-based pricing in their interstate toll rate structures: The price of an interstate call from Boston to Providence is the same as the price of a call from Boston to Nome, Alaska and all points in between. Such Apostalization \equiv of long distance rates (so called because first class postal rates are similarly not sensitive to distance) has been a growing trend throughout the industry. Many intrastate toll rate structures are also postalized, as are local rates in a number of major metropolitan areas. Indeed, there are today no technical differences between intraLATA calls that are rated as Alocal \equiv and those that are

59. There are 20 rate centers in the 617 NPA, 40 in the 781 NPA, 86 in the 508 NPA and 57 in the 978 NPA. Massachusetts DTE Docket No. 98-38, *Area Code Investigation*, Comments of Bell Atlantic-Massachusetts, March 19, 1999, at 7, footnote 9.

60. Technically, Manhattan embraces two full Bell AtlanticBNew York Arate zones \equiv and a portion of a third. However, the local calling areas and intrastate toll (inter-Region) rates associated with all three Azones \equiv are identical and, because all *interstate* toll rates have been postalized, toll rates to and from the three Manhattan rate zones are also identical. Thus, the '212' NPA is for all intents and purposes a single rating area.

61. The present geographic scope of the '212' NPA, i.e., Manhattan, was established in 1991 when the Bronx was transferred to the '718' NPA through a boundary change and new paging and cellular numbers were assigned to the overlay '917' area code. In 1998, the '646' all-services overlay was introduced, with the first '646' NXX code being assigned towards the middle of that year. Communities with far less telecommunications intensity than Manhattan, but with far more rating areas and within a wireless overlay, were subject to (in some cases) multiple area code splits or overlay introductions during that same 7-year period.

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subject to Atoll \equiv pricing treatment, yet the distinction between Alocal \equiv and Atoll \equiv remains solidly rooted in most ILEC tariff structures. Preserving and supporting that distinction is really the last remaining use for rating purposes of a highly granular rate center configuration. Therefore, having a rate center structure whose sole purpose is to support the measurement of distance, an attribute that is in many cases not even being used in the rate plan or in a local/toll distinction that has no cost-based justification, is clearly anachronistic in the present context.

This non-distance-sensitive cost attribute of modern ILEC intraLATA networks is a direct consequence of the dramatic development in digital switching and fiber optic transmission systems that have occurred over the past decade. It would seem, then, that the continuing need for extreme granularity in rate center definition can no longer be justified, at least not on the basis of the underlying cost of intraLATA calling services.⁶²

62. With postalization of most *interstate* long distance rates, there is no need for such granularity in the interstate context at all.

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Consolidation of rate centers can reduce the *future* demand for NXX codes and in so doing postpone or perhaps even avoid the need for additional area codes *provided that the consolidation occurs early enough in the life of an area code to be of value*, and also provided that *it is coupled with other number conservation measures*. Even if multiple rate centers are joined, ILECs continue to resist the use of the same NXX code in more than one central office switch,⁶³ and reclamation of previously-activated codes, which would generally involve number changes for the customers involved, is not considered to be a particularly desirable policy.

On the other hand, most carriers *other than ILECs*, e.g., CLECs and CMRS providers, typically cover many ILEC rate center areas with a single switching entity, and would thus be capable of substantially reducing their code demand if there were fewer rate centers. Such carriers must, however, obtain codes in multiple ILEC rate centers in order to be competitive with the ILEC or otherwise offer their customers local *inward* calling scopes consistent with the customers' normal ILEC rating area.⁶⁴ Once rate center-specific codes have been assigned and activated by the service provider, rate center consolidation will not *by itself* make such resources available to the general pool of numbers.

63. This is some dispute as to whether this constraint is technically necessary, particularly where LRN LNP is available. Indeed, even in the absence of LNP, the network routing structure has long provided for the possible sharing of the same NXX code among several central offices, and this measure may well be viable where such offices all share the same rating area.

64. As noted at footnote 57, *supra*, CMRS providers typically offer *outward* local calling scopes that are much more expansive than those offered by wireline ILECs. However, in order to be *called* on a local call basis, a wireless customer would need to be assigned a phone number that is rated to an exchange that is a local call from that customer's normal community of interest. Hence, even though a CMRS provider might serve an entire metropolitan area or even large portions of one or more states from a switching location, it would still want to obtain NXX codes rated at various points throughout its service area so as to offer its customers local calling to the wireless phone.

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The Commission has apparently concluded that A[r]ate center consolidation may be an attractive numbering optimization measure because it enables carriers to maintain their existing call-routing and call-rating methods, is competitively neutral, does not require LRN LNP, and does not preclude the adoption of other numbering optimization methods.⁶⁵ In fact, rate center consolidation will be of limited value *unless it is also combined with other measures, particularly number pooling* which, of course, *requires* LRN LNP. Hence, Joint Commenters cannot agree with this conclusion. Even with a major rate center consolidation effort but without number pooling, previously activated but highly underutilized NXX codes cannot be shared among multiple carriers and among what had previously been multiple rate centers. Hence, without number pooling, rate center consolidation by itself will do little to free up number resources once those have been assigned to specific carriers and rate centers.

By contrast, the combination of rate center consolidation and number pooling substantially enhances the effectiveness of both: With rate center consolidation, there are potentially more numbers available for assigned under pooling than there would be absent this additional measure. Thus, while states currently have the authority to order rate center consolidation, they need the additional authority to adopt measures that will enhance its effectiveness. These include, in addition to pooling, the reuse of contaminated blocks, individual number pooling (INP), unassigned number portability (UNP) and, where appropriate, the reclamation of previously-assigned codes and numbers.

The Commission seeks comment on the possible use of a SS7 signalling as an alternative method of rating individual telephone calls. Under such an approach, the dialed number would no longer supply rating information: instead, the rating information would be transmitted via the SS7 control channel from the carrier that carries the call to the originating carrier so that the originating caller can be properly charged. While theoretically possible, this approach cannot provide a reasonable alternative to NANP-based call rating. For one thing, the caller would have no *a priori* means for determining what a particular call will cost, whether it was a local or a toll call, or any other pricing attribute, since the called number will no longer convey any rating information. Second, customer premises equipment that records call details for internal charge-back or other cost attribution purposes would need to be upgraded to support this SS7 functionality. Inasmuch as most CPE, including most PBXs, currently lack SS7 compatibility or interfaces, such upgrades would be costly and would require many years to accomplish.

On the other hand, and for the reasons discussed above, the continuing need for the call rating function of the NANP has been significantly diminished due to the virtual elimination of distance as both a cost and a price driver. In fact, for the most part, numbering is used to differentiate among (a) local vs. toll calls, (b) intraLATA vs. interLATA calls, and (c) intrastate vs. interstate calls. In fact, these are the principal pricing attributes that remain in place today,

65. Notice, at & 113.

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and the complexity of the existing rate center structure is simply not needed to meet these significantly simplified call rating requirements. Rate center consolidation offers a long-term solution. However, in the short run, ILECs in particular will insist upon Arevenue neutrality⁶⁶ in any rate center consolidation plan, i.e., that whatever toll revenues may be lost through rate center consolidation be made up in higher charges elsewhere, e.g., higher monthly charges, higher local usage charges, or some combination thereof. What the ILECs ignore is the fact that with simplified billing and the potential avoidance of additional area code relief arising from rate center consolidation also comes reduced costs overall, and it is far from obvious that a simple dollar-for-dollar exchange of toll revenues for higher monthly rates or local usage charges is necessary or appropriate. In fact, many ILECs have been successful in amassing substantial levels of earnings under state Aprice cap⁶⁷ or other alternative regulation schemes, such that, at the very least, a state commission should be able to examine the overall cost, revenue and earnings situation of the ILEC prior to allowing automatic Arevenue neutral⁶⁸ recovery of foregone toll revenues resulting from rate center consolidation.

B. The Commission should not make adoption of rate center consolidation by a state commission a prerequisite to other forms of number resource conservation.

The Commission states that it considers rate center consolidation Ato be a vitally important long-term measure to optimize the utilization of numbering resources⁶⁹ and also clarifies its position that states do not need additional FCC authority to engage in rate center consolidation.⁶⁶

The FCC also seeks comment on how to encourage states to implement rate center consolidation, such as whether the FCC should delegate additional authority to states to require codeholders to return vacant, unused codes that are no longer needed as a result of rate center consolidation.⁶⁷ Joint Commenters oppose any linking by the FCC of numbering authority with rate center consolidation. Regardless of whether state PUCs decide to pursue rate center consolidation, the FCC should authorize states to implement improvements to the present number assignment and reclamation process. The Commission should facilitate state efforts to pursue rate center consolidation by providing the states with the authority to implement additional relief measures that, in tandem with rate center consolidation, will work to conserve number resources, but authority to implement those measures should in no way be contingent upon whether states consolidate rate centers. The Commission should not make adoption of rate center consolidation by a state commission a prerequisite to other forms of number resource conservation. States are in the best position to determine the relative effectiveness of other

66. *Id.*, at && 116-117, footnote omitted.

67. *Id.*, at & 118.

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number optimization measures implemented either in combination with or without rate center consolidation.

IV. MANDATORY TEN-DIGIT DIALING

- A. The drawbacks to mandatory 10-digit dialing on all home area code calls nationwide overwhelm the minimal benefits of this policy as an effective number conservation measure.**

The NPRM seeks comments on mandatory ten-digit dialing nationwide as a number resource optimization measure. The Commission describes mandatory ten-digit dialing as Aentail[ing] the dialing of ten digits for all calls, regardless of whether they are inter-NPA and intra-NPA and rated as local or toll.⁶⁸ This potential number resource optimization measure is categorized by the Commission as one Athat do[es] not require LNP.⁶⁹

68. *Id.*, at & 123.

69. *Id.*

Mandatory Ten-Digit Dialing

As a general matter, measures that do not require LNP should, at this point, be subordinated to those that benefit from the widespread deployment of the LNP capability in all major telecommunications market areas.⁷⁰ In LNP tariffs filed with the FCC earlier this year, ILEC customers will be paying in excess of \$738-million annually ostensibly to reimburse ILECs for LNP implementation costs.⁷¹ As of June, 1999, only 2.2 million ILEC telephone numbers were actually being Aported≡ to CLECs,⁷² implying an annual cost per ported number of \$329. *Consumers, who are being required to pay for LNP, should certainly be afforded the full benefit of LNP as a means for achieving number resource optimization before being subjected to inconveniences such as mandatory 10-digit local dialing.* Joint Commenters believe that measures such as this should be adopted only as a Alast resort≡ if all else fails. However, there is no reason why all else should fail.

Ten digit dialing on calls within the same area code is inconvenient, confusing, a source of additional dialing errors and unwanted long distance charges, and creates potential public safety concerns to the extent that young children and the elderly may have difficulty remembering the longer phone numbers. Moreover, the benefits of nationwide 10-digit dialing as a number resource optimization measure are minimal at best. Two specific possible benefits have been identified by the Commission: 1) eliminating the need for Aprotected codes;≡ and 2) the possibility of using the AD≡ digits '0' and '1' in central office codes.

With respect to Aprotected codes,≡ the potential increase in the availability of usable NXX codes in an NPA will be quite small. Generally, NXX codes that correspond to adjacent NPAs are not assigned to avoid dialing errors. Thus, the '212' NXX (the NPA for Manhattan) would

70. In the Matter of Telephone Number Portability, *First Report and Order and Further Notice of Proposed Rulemaking*, CC Docket No. 95-116, Released July 2, 1996, at & 2. The Commission required full LNP implementation, pursuant to § 251(b)(2) of the *Telecommunications Act of 1996*, in the 100 largest US market areas (MSAs) by February 1, 1999. *Third Report and Order*, at & 142. However, wireless services are either exempt altogether (paging) or have been allowed to defer LNP implementation until November, 2002. See note 14, *supra*.

71. LNP cost recovery is schedule to occur for five years. Thus, the approximate total cost of implementing LNP is \$3.7-billion. *Investigation Produces Lower Number Portability Charges for Customers of Ameritech, GTE, Pacific and Southwestern Bell*, July 1, 1999 FCC News Release, Report No. CC 99-24, CC Docket No. 99-35. *FCC Investigation Produces Lower Number Portability Charges for Customers of US West Communications, Inc.*, July 9, 1999 FCC News Release, Report CC 99-26, CC Docket No. 99-35. Bell Atlantic Transmittal No.1111, filed March 2, 1999; chart 2b. BellSouth Transmittal No. 502, filed April 30, 1999; Appendix A, Workpaper 1.

72. *Active Subscriptions Version Report*. Lockheed Martin IMS, Number Portability Administration Center (NPAC), available at <http://www.npac.com/docs/sv_cnt.txt>.

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typically not be defined in the '718' (remainder of New York City) and '201' (Northeastern New Jersey) NPAs; similarly the '202' NXX (the NPA for Washington, DC) would not be used in the '301' and '703' NPAs in suburban Maryland and Northern Virginia. As a general matter, the quantity of such Aprotected⁷³ NXX sequences is typically very small, perhaps less than five or six codes, in each NPA. At best, therefore, the mandatory use of 10-digit home area code dialing might free up something under 1% more NXX codes in existing NPAs X which is certainly not worth the trouble.⁷³

With respect to the possible use of '0' and '1' as the initial digit in the central office code (which would then be 'XXX' codes), the Commission has already recognized concerns expressed as to the network disruptions that such numbers might create. While this measure could create as many as 25% more central office codes in each NPA, given that CLEC utilization rates are currently running in the 5% range, it would seem that number pooling and other LNP-based measures (particularly INP and UNP) will be far more effective in freeing up numbers than would be the creation of additional highly underutilized central office codes.

In addition, public safety concerns would arise with respect to elevator rescue phones, alarm dialing systems, and multiple-unit dwelling intercom entrance systems that are based on seven digit dialing and that may require significant and costly upgrades to migrate to a mandatory ten digit dialing plan.

Joint Commenters believe that the potential resource optimization gains from LNP-based measures will far outweigh the much smaller benefits associated with mandatory 10-digit dialing, and that the Commission should direct that states pursue and implement LNP-based solutions before embarking upon these more drastic and disruptive approaches.

V. POOLING

A. The FCC should unambiguously authorize state public utility commissions to examine and to implement number pooling.

The FCC should immediately issue an order that unambiguously authorizes states to implement number pooling. Number pooling relies on the location routing number (LRN) infrastructure that has already been deployed by wireline carriers in major metropolitan areas and for which carriers have already started to recover costs from consumers. One concern that has been raised about state involvement in number pooling is the potential lack of uniformity in pooling efforts. While Joint Commenters are sympathetic to the potential inefficiency associated

73. The impact of protected codes varies among jurisdictions.

with multiple simultaneous state pooling directives, action is paramount, and any inefficiency that may occur from state-initiated pooling directives pales in comparison to the costs engendered by further delay.

While uniform protocols are being developed, numbers are being squandered which threatens the life of the NANP. To the extent that the FCC (and/or the industry) can develop and provide national guidelines in a timely manner, Joint Commenters are optimistic that states, in their individual proceedings, will welcome that technical guidance. However, in the interim, it is essential that the FCC provide the states with immediate authority to move forward. States do not seek authority lightly and are not interested in imposing differing requirements for the sake of asserting their right to oversee numbering. States seek authority because they are eager and willing to step up to the plate and to ensure that the public's interests are reflected. If there is some duplication of effort, this is a small price to pay for taking tangible steps to prevent squandering of a valuable public resource.

The FCC seeks comment on the participation of non-LNP-capable carriers in pooling.⁷⁴ Those carriers who are not able to participate in pooling should be assigned to a separate NPA until such time as they are able to participate and contribute to pooling efforts.

The impact of thousands-block pooling is greatest for new NPAs. Thousands-block pooling is not a cure for the substantial inefficiencies in the embedded base of numbers, and thus should not be viewed as the panacea to the numbering crisis. Therefore, the FCC should immediately open an investigation into the feasibility and potential of individual telephone number pooling and also should immediately authorize states to implement unassigned number porting (UNP).

74. Notice, at §§ 159-176.

Pooling

The FCC seeks comment on setting a 10% threshold contamination level.⁷⁵ The establishment of the so-called Acontamination \equiv level for pools is highly controversial, in large part because of its potentially disproportionate impact on incumbent and new carriers, and also because of the potential impact on consumers. The NANC Report recommends a contamination level of 10%, which means that if a carrier uses more than 100 line numbers in a thousands-block, the block would be considered Acontaminated \equiv and thus the carrier would not need to return the block to the pool. Incumbent carriers are far more likely to have contaminated blocks and thus will contribute disproportionately less to the pool under this threshold. The Minority Statement that accompanied the NRO Report, however, proposed a contamination level of 50% as a minimum.⁷⁶

The proposed level of 10% is likely to be inadequate in many circumstances, as it provides inadequate access to the embedded base of underutilized numbers and also severely disadvantages new entrants. The contamination level should be set at a substantially higher level in order to free up significant numbers and in order to not disproportionately affect new entrants. For example, in California, the PUC has established a contamination level of 25% as a Aprecautionary safeguard on an interim basis to protect 1000-number blocks from undue 'contamination' pending the implementation of number pooling.⁷⁷ There is clear merit to erring on the Ahigh \equiv side so that ultimately, the potential quantity of numbers that can be pooled is that much greater. If, during today's efforts to preserve blocks of numbers, the contamination level is set too low, then, at a later date (when pooling actually occurs), should it be proven feasible to rely on a higher contamination level, a significant opportunity for number optimization would have been missed. Regardless of the contamination level that is established, the Joint Commenters assume that, although carriers would return Acontaminated \equiv blocks to the common pool, consumers would not need to give up any numbers in those returned blocks that have already been assigned, because their numbers would be ported among carriers.

75. *Id.*, at & 188.

76. NANC Report, Minority Statement, at section A.1.

77. California PUC, D.98-05-021, *Order Instituting Rulemaking on the Commission's Own Motion into Competition for Local Exchange Service* (Approving a Relief Plan for the 310 NPA), R.95-04-043, *Order Instituting Investigation on the Commission's Own Motion into Competition for Local Exchange Service*, I.95-04-044, May 7, 1998.

Pooling

Joint Commenters are aware of the intense opposition to increasing the contamination threshold. State PUCs and state consumer advocates are in the best position to balance the various numbering, consumer, and competitive concerns raised by the establishment of a contamination level. Joint Commenters recognize that while some may seek uniformity in numbering guidelines, in this area, as in many others, Joint Commenters believe that the pressing need for states to have the ability to address the numbering crisis effectively greatly outweighs any perceived need for uniformity. The existence of differing contamination levels throughout the country is a small price to pay for the expedient implementation of numbering optimization measures.

Furthermore, thousand-block assignment should occur on an overall rate area rather than by individual switching entity.⁷⁸ Also, when carriers seek to justify their requests for additional numbers (thousands blocks) these requests should be done on a rate center basis, not a switch basis. If, instead, pooling is implemented on a switch-basis, carriers with relatively more switches in a rating area (typically the incumbent carriers) will obtain more numbers, which would not be a competitively neutral result and which would also lead to less effective utilization of numbers.

The lack of sequential number assignment is also jeopardizing society's ability to optimize its use of numbering resources. The industry is now Aon notice⁷⁹ that thousands-block pooling is likely to be implemented in the near future, and based on that expectation has an incentive to contaminate blocks of numbers. Therefore, thousands-blocks may be contaminated not only as a consequence of carriers' random (i.e., unintentional) assignment of numbers throughout a block, but also could be being contaminated as a result of intentional scattered assignment by carriers seeking to Aprotect⁸⁰ their continuing access to existing numbers. Put differently, the more effectively carriers succeed in contaminating blocks of numbers, the less likely it is that they will have to return blocks to a common pool. Therefore, the Commission should immediately authorize states to order sequential number assignment so that, when thousands-block pooling occurs, there are blocks remaining to pool.

78. Comments of MCI Worldcom, In Response to Public Notice DA 98-2265, *In the Matter of North American Numbering Council Report Concerning Telephone Number Pooling and Other Optimization Measures*, NSD File No. L-98-134, December 21, 1998, at 22, citing ¶ 9.3.4 of the INC Draft Thousands Block Pooling Administration Guidelines, December 11, 1998.

Pooling

The Commission raises several questions about sequential number assignment.⁷⁹ There has been an unfortunate loss of time due in part to ambiguous or curtailed authority of states to oversee the efficient management of resources. It is essential that the FCC eliminate any residual ambiguity. To the extent that either the FCC and/or industry groups develop national guidelines, this information can be conveyed in state regulatory proceedings. Sequential number assignment (also referred to as Avirtual pooling≡ or thousand-block preservation) should occur immediately for LNP and for non-LNP capable carriers in anticipation of pooling. The present situation X where consumers must rely on the *voluntary* cooperation of industry members in order to preserve uncontaminated blocks X is not in the public interest. The FCC should provide states with the unambiguous authority to direct thousand-block preservation. Specifically, the FCC should take the necessary steps to preserve uncontaminated thousands blocks and also should immediately issue an interim decision that allows states to order sequential number assignment. Otherwise numbers will be needlessly squandered because, absent such a directive, the effectiveness of thousand-block pooling will be jeopardized.

B. Consumers have already paid for LRN and should not have to pay again.

The Notice seeks comment on a variety of thousands-block pooling cost recovery issues, including the Commission's authority to Aprovide the distribution and recovery mechanism for both intrastate and interstate costs of number pooling,≡⁸⁰ the competitive neutrality of such a recovery mechanism,⁸¹ and on particular cost recovery paradigms.

Joint Commenters oppose the recommendation that carriers be allowed to recover costs associated with number pooling through price caps and rate of return systems.⁸² Dealing with numbering and number conservation is *not* an Aexogenous cost≡ eligible for flow-through to ratepayers, but is instead a normal Acost of doing business≡ resulting from the evolutionary growth of the public switched network. Moreover, inasmuch as consumers are already being required to pay almost \$3.7-billion for LNP,⁸³ the preponderance of which was to upgrade carriers' STP, SCP and OSS, LNP technology should also be used to accomplish number conservation. A carrier's refusal to implement number conservation measures should be a basis for the FCC to terminate that carrier's right to recover its LNP costs.

79. Notice, at && 190-192.

80. *Id.*, at & 193.

81. *Id.*, at && 195-196.

82. *Id.*, at & 204.

83. See footnote 71, *supra*.

Pooling

Joint Commenters also oppose the Commission's recommendation to explore establishing a per-number charge to pay for number pooling.⁸⁴ While it would appear to encourage the efficient use of numbering resources, it is premature at this time because low utilization rates experienced by certain carriers result from mandatory 10,000-block (full NXX code) assignments, not from any actions by those carriers. As such, per-number charges would disproportionately affect new entrants. Moreover, it cannot be forgotten that the direct societal costs associated with NPA expansion has thus far been borne solely by consumers.

C. The industry consensus on UNP and ITN understates the potential effectiveness of these numbering optimization measures.

84. Notice, at & 206.

Pooling

Consumers are already paying for local number portability and thus should reap the full benefit of this technology. Because carriers have already incurred the costs to implement LNP, there should be no additional costs to implement unassigned number porting. Furthermore, Joint Commenters are dismayed that the FCC has tentatively concluded not to pursue ITN pooling.⁸⁵ The implementation of thousands-block pooling should not hinder moving forward on the implementation of ITN pooling. Indeed, both forms of pooling are needed to alleviate the current numbering crisis. Because the NANP is endangered, it is critical to also move forward on ITN. Thousands-block pooling is less effective, and if combined with other number optimization measures, may not significantly prolong the life of the NANP. The NRO's conservative estimate was a time period of between 4 and 6 years for ITN pooling implementation, but Joint Commenters believe that, with the appropriate sense of urgency, regulators' leadership, and industry cooperation, the estimated time period could be substantially shortened.

Joint Commenters share MCI-Worldcom's concern with the NRO Report's conclusions on ITN.⁸⁶ Joint Commenters urge the FCC to immediately open a proceeding specifically on ITN, to determine how it can be implemented within three years rather than the four-to-six year time frame reflected in the NRO report. The estimate of four to six years represents an industry consensus. Continuing to rely on industry groups to agree to ITN in a timely fashion would be unwise and would delay much-needed improvement in the optimization of numbers. The industry expertise that industry groups offer can be contributed more productively in a different forum, namely federal and state regulatory proceedings. Left solely to industry groups, consumers will always be presented with the most watered down least controversial solution and one that may well reflect an industry consensus but that fails entirely to consider consumers' interest and the exorbitant cost of inaction.

85. *Id.*, at ¶ 212.

86. Comments of MCI Worldcom, In Response to Public Notice DA 98-2265, *In the Matter of North American Numbering Council Report Concerning Telephone Number Pooling and Other Optimization Measures*, NSD File No. L-98-134, December 21, 1998, at 17.

Pooling

In the short-term, the FCC and state PUCs should order implementation of UNP,⁸⁷ and in the longer-term, the FCC should explore ITN in more depth than was possible during the NRO process. Joint Commenters commend the FCC for the NRO process because, unlike the traditional industry-based approach to numbering issues, the NRO process included consumer representatives and state PUCs. Based on our experience in that process, however, we are acutely aware that there is simply no consensus on the vast majority of numbering issues and furthermore, that the process itself tends to be dominated by incumbent carriers, whose interests may not always coincide with that of new entrants and that of consumers. For this reason, we urge the Commission to continue its own active participation in resolving the numbering crisis and to clearly authorize state PUCs to participate in and to adjudicate numbering issues. The Aconsensus≡ oriented approach leads to delay and to the neglect of controversial areas. The numbering crisis requires solutions which inevitably some will oppose, and if the FCC should await the development of a consensus of these numbering issues, valuable time will be lost.

The FCC should not simply defer to industry groups. Industry groups can offer valuable assistance, but if consumers await industry agreement on these highly contentious issues, the life of the NANP will be severely threatened. Were it simply a matter of figuring out technical and administrative matters, industry groups= dominance over the issue might not be so troubling, but because it is also a matter that pits incumbent interests against those of new entrants, Joint Commenters believe that it is unlikely that any meaningful and effective consensus will emerge in a timely manner. State PUCs and the FCC should lead the efforts, seeking industry input, but being willing to make difficult choices in order to reap the benefits of number optimization before it is too late for these measures to make a difference.

D. Regulators, working in concert with consumer groups and carriers, should select numbering optimization strategies.

The use of thresholds (rather than specific solutions) that the FCC discusses has some theoretical appeal but the practical limitations are so severe that we recommend that the FCC not continue further down this road. The approach described by the FCC could lead to fragmented resolution of a serious numbering crisis, where one carrier's decision could undermine the overall effectiveness of a number optimization measure. The FCC refers to the Ales intrusive≡ state and federal regulation under such an approach.⁸⁸ Intrusion is exactly what is needed. Joint Commenters urge the FCC to intrude and simultaneously to allow states and consumer groups to intrude. It is precisely because of the lack of regulatory intrusion in numbering matters that numbers have been needlessly squandered.

87. With UNP, carriers can transfer telephone numbers among themselves to serve customers.

88. Notice, at & 224.

VI. PRICING OPTIONS

A. It is premature to consider requiring carriers to pay for numbers.

The FCC seeks comments on the use of pricing to allocate numbering resources.⁸⁹ The purpose of such an approach would be to discourage carriers from requesting more numbers than they actually require. Joint Commenters recommend that the FCC defer further consideration of this option until it has pursued all other options first. Joint Commenters concur with the objective of optimizing the use of scarce resources, but, in this instance, a major cause of the inefficiency has to do with the way that numbers are assigned and allocated rather than with the actions of individual providers.

Instead of expending regulatory and industry resources on the pursuit of this option, federal and state regulators, working with consumer groups and the industry, should press forward with other critical number optimization measures. Variations in number utilization rates result from the allocation process rather than from actions of individual providers, and therefore it is premature to penalize carriers from inefficiencies that they cannot prevent. Only after other number optimization measures have been implemented, should the FCC consider this approach.

Another drawback to this approach is that it would likely disproportionately disadvantage new entrants (which, by definition, do not have access to large embedded bases of numbers) and/or carriers with relatively less ability to purchase numbering resources. Furthermore, this option could have the unintended effect of actually accelerating the depletion of numbering resources. Carriers could well decide that despite the price tag X it would serve their strategic interest to buy up quantities of numbers for future unspecified use. This consequence thus has at least two negative side effects. First, the payment scheme would favor those companies with relatively more financial resources (e.g., ILECs). Second, carriers with the financial wherewithal could buy more numbers than they actually need since the allocation system would reflect carriers' ability to spend money rather than carriers' well-documented verification of need for numbers.

In summary, if the cost to the carriers of purchasing the resources did not fully reflect the cost to society of avoiding area code jeopardies, carriers would purchase an inefficient quantity of numbers, i.e., carriers might buy more numbers than they need if the price failed to reflect the substantial externalities created by inefficient use of numbering resources. The proposed scheme would likely harm consumers. The additional charge for numbers would likely be passed on to consumers as well. Also, because the incumbents already possess an embedded resource base B the acquisition of which has not caused them to incur any cost B this scheme

89. *Id.*, at 225-240.

Pooling

would discourage the development of competition, thus diminishing the prospects of competitive choices for consumers.

VII. AREA CODE RELIEF

The Commission seeks comments on how it can assist states in implementing area code relief in a manner that is consistent with any other numbering resource optimization measures.⁹⁰

The focus of the FCC's efforts in this area should be to expand the options available to PUCs for preventing the need for area code relief, particularly those that promote the efficient, competitively neutral use of numbering resources in a way that minimizes costs to consumers and society. Joint Commenters, therefore, focus its comments in this section on the need for state regulators to have access to service- and technology-specific overlays as a way to provide area code relief. We do not address the relative merits of geographic splits (§§ 248 - 249) versus all-services overlays (§§ 250- 255) because we believe that these are issues best addressed by states, which are more familiar with the specific concerns of consumers and competitors.

A. The urgency of the numbering situation warrants elimination of the prohibition on service- and technology-specific overlays.

The FCC prohibited all service- and technology-specific overlays because it found that such overlay plans would be unreasonably discriminatory and would unduly inhibit competition.⁹¹ Neither conclusion is warranted. Furthermore, given the severity of the numbering shortage that presently exists, we recommend that the FCC immediately repeal the prohibition on service- and technology-specific overlays in order to provide states with an essential numbering option and also to avoid the discriminatory and anti-competitive effects inherent in all-service overlays.

90. Notice, at § 241.

91. Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, *Second Report and Order and Memorandum Opinion and Order*, CC Docket No. 96-98, 11 FCC Rcd 19392, 19511 (1996) (*Local Competition Second Report and Order*), *vacated in part*, *California v. FCC*, 124 F.3d 934 (8th Cir. 1997) (vacating dialing parity rules as applied to intraLATA telecommunications and finding challenge to cost recovery methodology for numbering administration not ripe for review), *rev'd* *AT&T v. Iowa Utils. Bd.*, 199 S. Ct. 721 (1999).

Area code exhaust is a topic that has been visited by countless states in the past few years, and each time the issue arises it is met with strong input from the public. This is not surprising, since few issues, if any, impact residential and business customers to the extent that the introduction of new area codes does. Joint Commenters' members attend the public hearings that have taken place across the country on the issue of new area codes, and have experienced firsthand the public's frequent support for technology- and service-specific overlay plans. The message sent by the public is clear, and has been heard by at least three state utility commissions. State regulators in Connecticut, Massachusetts and California have all filed petitions with the FCC seeking the authority to implement this form of area code relief.⁹² These states have requested the ability to take matters into their own hands and implement service- and technology-specific overlays in an effort to resolve numbering problems in their own backyards: the FCC needs to recognize the necessity of providing the states with the authority to do so.

But it is not just public opinion that should provide the impetus for reversal of the prohibition on service- and technology-specific overlays. The FCC's rationale for its original prohibition on wireless overlays was that it would competitively disadvantage wireless carriers who would compete with wireline carriers.⁹³ Some believe, however that there is not any material competition between mobile services and fixed services carriers (that is, that customers do not substitute one service for the other), and also believe that such competition is not likely to materialize in the near future.

92. See Connecticut Petition (footnote 12, *supra.*), Common Carrier Bureau Seeks Comment on Massachusetts Department of Telecommunications and Energy Petition for Waiver to Implement a Technology-Specific Overlay in the 508, 617, 781 and 978 Area Codes, *Public Notice*, NSD File No. L-99-19, DA 99-461 (rel. March 4, 1999), and Common Carrier Bureau Seeks Comment on a Petition of the California Public Utilities Commission and the People of the State of California for a Waiver to Implement a Technology-Specific or Service-Specific Area Code, *Public Notice*, NSD File No. L-99-36, DA 99-929 (rel. May 14, 1999).

93. Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech-Illinois, 10 FCC Rcd 4596 (1995); Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, 11 FCC Rcd 19392 (1996).

Area Code Relief

A service- and technology-specific overlay is competitively discriminatory *if and only if* the service providers in the original and in the overlay area codes actually compete directly with one another. While the possibility exists that, at some point in the future, wireline and wireless services may become head-to-head competitors, for the present there is no evidence to support such a conclusion. Indeed, despite the enormous growth in CMRS penetration rates (currently in the 26% range nationwide),⁹⁴ there is no indication of any net decrease in the demand for basic wireline exchange access;⁹⁵ indeed, the demand for *additional* residential access lines is at an all time high!⁹⁶ If consumers were actually substituting wireless services for their wireline phones, one would expect to see the demand for the latter slipping, yet that is unambiguously not the case.

On the other hand, wireline exchange services furnished by incumbent local exchange carriers (ILECs) compete directly with wireline exchange services offered by CLECs. Under an all-services overlay, CLECs are disproportionately assigned numbers in the overlay NPA while the ILEC controls an extensive inventory of numbers with the traditional geographic area code. As long as consumers perceive that traditional area code as providing some specific geographic identification (e.g., '212' for Manhattan), they will resist accepting overlay NPA numbers (e.g.,

94Fourth Report, In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, FCC 99-136, June 24, 1999, at 6.

95Access line demand growth has averaged over 5.5% annually over the last ten years and has not fallen below 7% in the last three years reported. FCC Statistics of Communications Common Carriers 1988-1998, Table 2.10.

96According to the FCC, there were just under 18-million additional residential access lines by the end of 1997. FCC Industry Analysis Division, Trends in Telephone Service, February 1999, Table 20.4.

Area Code Relief

'646') notwithstanding the matter of how many digits callers are required to dial in an all-services overlay situation.⁹⁷ Indeed, according to the Lockheed Martin Number Utilization Study, ILECs on average utilize only 36% of the numbers that have been assigned to them,⁹⁸ leaving 64%, or some 362-million ILEC numbers, available for assignment to new customers. Moreover, the typical churn rate for ILEC residential customers is roughly 25%, such that new supplies of numbers in the Atraditional≡ geographic NPA are continually becoming available. Under an all-services overlay, the incumbent will maintain its advantage with respect to numbers that consumers perceive to be Amore desirable≡ for many years to come.

Adoption of service- and technology-specific overlays is one way to eliminate an incumbency advantage that may be uniquely available to preexisting service providers (both wireline and wireless) vis-a-vis newer service providers, and would free up NXX codes in the original NPA, thus creating numbering parity as between incumbent and new fixed services carriers.

⁹⁷The public's attitude toward such overlay numbers was dramatized in a 1998 *Seinfeld* episode.

⁹⁸Number Utilization Study, at 8.

VIII. CONCLUSION

The Joint Commenters commend the FCC for its detailed NPRM which sets forth many options for optimizing the use of the nation's numbering resources. States urgently require authority to implement a wide range of measures so that they can contribute immediately and effectively to resolving the numbering crisis. State regulatory intervention is essential because, the industry-dominated, consensus-oriented approach to the numbering problem (and the many contentious issues associated therewith) that now prevails is delaying much-needed, decisive action. Consumers are paying substantially for delay now, as a result of frequent area code exhaust. Absent timely and concerted efforts, we risk exhausting the NANP, which would cause additional staggering consumer and societal cost, possibly exceeding the societal and economic cost associated with the AY2K bug. Therefore, the Joint Commenters urge the FCC to delegate comprehensive numbering authority to states immediately so that they can work collaboratively with the FCC to prevent any further squandering of the numbering resources, and we request that the FCC consider the Joint Commenters' other many recommendations contained in these comments.

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